

Message from State Controller Kathleen Connell

In this issue of the Controller's Quarterly, the focus is on the single largest threat to California's economy—the energy crisis. In addition to the high-profile electricity crisis, shortages in natural gas and gasoline that also threaten the State's economic growth are addressed. Resolving our energy crisis has proven to be very costly and difficult. Strong bipartisan leadership and cooperation is needed to overcome this great challenge.

I am pleased to present in this edition a number of articles highlighting various perspectives on the nature and scope of our energy problems, as well as possible solutions. Also included are articles that detail the impact of the energy crisis on the consumers, businesses and local governments of California.

There are indications that the California economy is slowing, but no indication that the State as a whole is in recession. The unemployment rate in May remained unchanged from the April level of 4.9%. Job growth is slowing from the robust pace of last year, but workers continue to enjoy a tight labor market. It is anticipated that the economy will continue to grow this year, but at a slower pace. How much slower will be impacted not only by the national economy, but by the weather—a cool summer would help.

Peak prices for electricity in California have increased 1,000% over the last year. Natural gas prices in April 2001 in the U.S. were almost double their level of a year ago, and California prices are 170% higher than on the East Coast. Gasoline prices increased by 22% in just the first five months of this year and reached a peak of \$2.02 per gallon in May. Price increases of this magnitude threaten not only business profits, but also the very survival of some businesses, as well as the jobs and budgets of consumers. Money diverted from investments and savings to energy costs reverberates through the economy.

Local government budgets are feeling the strain of energy costs, as well as residential and business customers in California. Guest author Mayor Willie Brown of San Francisco highlights the steps that the City by the Bay is taking to create a more reliable source of electricity for its citizens and businesses. Another contributor points to the sharp increases in the cost of gasoline to California's consumers and businesses.

The energy crisis is also examined from the perspectives of both economists and consumer advocates. There is a wide range of opinion on both the problem and the solution. The problem is seen as either a lack of supply or a lack of control over suppliers. Solutions for the electricity market range from patiently revamping the deregulated market to aggressively restoring a system of publicly-owned power. I think you will find these articles both informative and interesting.

This Quarterly closes with a discussion of the most long-term solution of all—renewable technologies. Though California's energy crisis is very immediate, a long-term vision is critical to implementing solutions. The fact that fossil fuels—exhaustible and polluting natural resources—constitute a majority of our energy today reminds us that alternative technologies must be considered in building energy infrastructure for the coming century.

As California's Chief Financial Officer, I am deeply concerned about California's energy crisis. The California economy, though diverse and strong, cannot continue to prosper unless we address our energy crisis with urgency. We must quickly take leadership in implementing timely solutions with near-term results and long-term vision for California's future prosperity.

KATHLEEN CONNELL
Controller, State of California

The California Economy: 2001 Mid-Year Update

“The State’s economy was in for a moderate slowdown without the current energy crisis... the onset of sharply higher electricity costs raises the risk of further weakening the economy.”

Wish for a Cool Summer

As summer approaches, it is not clear from the mixed signals that the national economy is in recession. In contrast, the California economy is not. The State’s economy is softening, especially in the Bay Area counties, but the aggregate indicators show no pronounced signs of weakness. The California economy is continuing to generate jobs, but at a lower level than a year ago. The unemployment rate in May was unchanged from the April level of 4.9%, but still 0.1% lower than May 2000. For the first five months of the year, total non-farm employment increased by an average of 12,540 jobs per month, compared to the average monthly increase of 46,183 in the year 2000.

The energy concerns that have escalated this year cast further doubt on the ability of the State’s economy to remain resilient, especially if the summer months are hot. The State’s economy was in for a moderate slowdown without the current energy crisis, but the onset of sharply higher electricity costs

raises the risk of further weakening the economy.

A cooler summer reduces the demand for power, diminishing the need for peak electricity generation, which can produce brownouts and blackouts. Voluntary conservation by consumers and businesses will also help to minimize the disruptive nuisance of temporary power blackouts.

Despite the threat of rolling blackouts and higher prices for electricity and gasoline, it is not likely that these disturbances and irritations will plunge the California economy into recession, at least not this calendar year. Stage II and Stage III energy conditions (the latter indicating blackouts) will be announced in advance, enabling adequate preparation by businesses and consumers. The Controller’s outlook still calls for relatively solid job growth in the State this year, higher wage rates, low unemployment and continued consumer spending, albeit at a much slower rate than the torrid (and unsustainable) pace observed last year.

Energy Concerns

Electricity is not a major cost component of California businesses. Increasing prices for power will not likely impel businesses to leave California in the near term.

Higher prices announced in May by the California Public Utilities Commission will provide a significant conservation incentive for business and household users. Reduced demand for power will reduce the frequency of blackouts.

Certainly a prolonged period of power disruption and uncertain energy price relief would discourage business expansion in California. However, supply side conditions appear promising. Over the course of the next 18 months, significant expansions in power generating capacity will have been completed. Furthermore, the prices of natural resources fueling power plants both here and throughout the U.S. show no long-term upward trend. In particular, the escalating price of natural gas, a significant part of California’s electricity cost problem, is the result of an

Figure 1

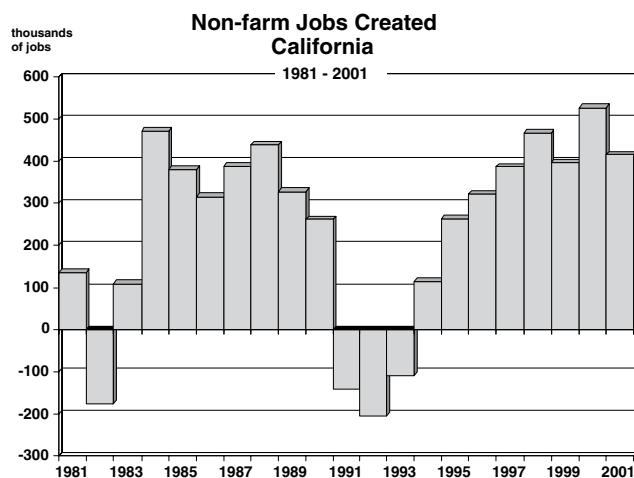
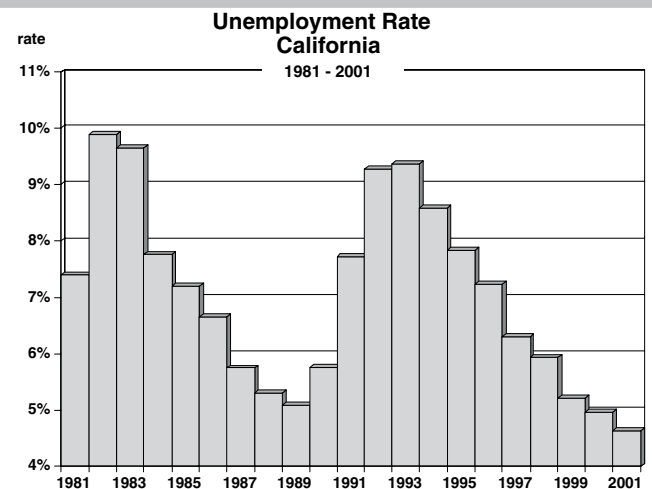


Figure 2



imbalance between supply and demand, which is very likely to be resolved by next winter.

Barring some unanticipated event, the energy crisis should be confined to the short term. Though California businesses will face higher prices, most will adapt knowing that the current energy problem will be resolved.

Employment

While employment growth shows signs of slowing, the evidence does not point to a contraction of jobs this year. Figure 1 shows the projected annual job growth based on the first four months of the year. The May data will lower that projection, but growth is still expected to be strongly positive.

Employment growth shows some evidence of slowing but no evidence of contraction. Labor market conditions remain very tight, despite the spate of layoff announcements that have bombarded our news since January (Figure 2).

The sector creating most of the jobs in California this year continues to be business services, which includes technology service firms. The healthcare and construction sectors are also leading the labor markets in job creation. Last year, total employment rose 3.8%—

the largest gain in 17 years. This year, the outlook calls for a noticeable slowdown in job creation, to 2.2%.

Personal Income

Last year, personal income jumped 11.5% (Figure 3). Income from all assets, including financial assets, grew by nearly 8%. This year, there will be fewer capital gains from stock market sales. Wage and salary income growth will be limited by moderate labor market growth and the extent of proprietor income gains will reflect the softening economy.

Though the Nasdaq Composite Index suffered a 56% freefall between March 2000 and March 2001, the hemorrhaging appears to have abated. Valuations are more in line with expectations and interest rate reductions by the Federal Reserve can only help stock market earnings. Households will continue to hold stock or add to their holdings this year.

The largest component of personal income is labor income in the form of wages and salaries. The 14.3% gain recorded in 2000 was extraordinary. The outlook for labor market earnings suggests a 7% increase in wage and salary income in 2001. Fewer jobs will be created this year and

wage hikes are not expected by workers in a softening economy.

Personal income tax receipts, the largest single source of revenue to the California General Fund, leaped 21% for the fiscal year ending June 30, 2000. For the first 10 months of fiscal 2001, general fund revenues are running 10% higher than last year.

Taxable Sales

Consumer confidence in the Pacific region fell from 144.7 in October 2000 to 107 in February 2001. Taxable sales continue to rise, but at a decelerating rate. During the first quarter of 2001, the growth in taxable sales was estimated at 4.1%, or close to 1% when adjusted for inflation (Figure 4).

Nevertheless, consumers are still spending in California, especially on services, automobiles and housing. While the retail sector has weakened nationwide, there is still significant activity in California, especially Southern California.

New Development

Residential building has gradually improved in California, from a low of 84,000 units in 1994 to 148,300 units last year (Figure 5). This year, for the first four months, the annual pace of

“This year, the outlook calls for a noticeable slowdown in job creation, to 2.2 %.”

Figure 3

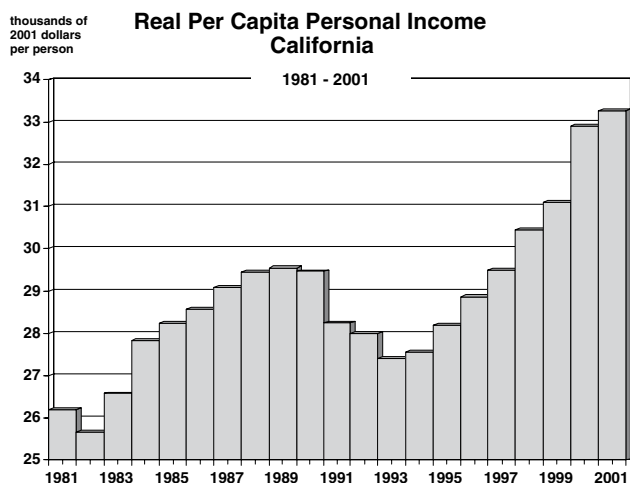
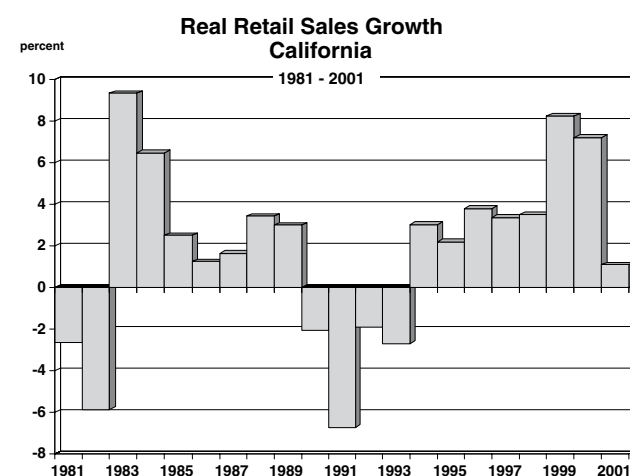


Figure 4



“Consumers are still spending in California, especially on services, automobiles and housing.”

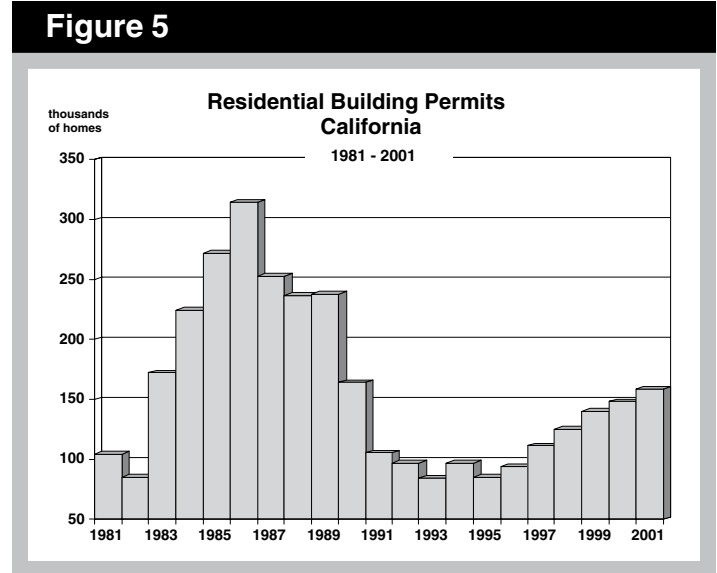
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new home permits is averaging 156,000. The outlook does not show a significant softening in this sector, due to the chronic excess demand for housing.

Despite eroding consumer sentiment in tandem with stock market portfolios, the demand for housing—both new and existing—remains strong in California. The housing crisis is a serious long-term challenge in California (see Controller’s Quarterly, Spring 2001). Affordability and availability continue to remain a large problem for home seekers. Consequently, home builders will remain busy in California in 2001 and 2002.

New and existing home sales are off just 8% this year from the record level of sales set last year. Median home selling prices continued to rise during the first four months of the year throughout the State. In March 2001, the median home value in California was 12% higher than the median value 12 months earlier.

Office vacancy rates remain low in most areas of the State, but they have begun to move up noticeably in the San Francisco Bay Area. Vacancy rates in Southern California are still declining, most notably in



Orange, San Diego and Ventura Counties.

New commercial development is also ahead of last year’s pace by 16%. More commercial buildings are currently underway in the Central Valley, Santa Clara County, the Sacramento Valley and the Inland Empire.

The General Outlook

A slowdown in California was forecast for 2001 and that slowdown will become more convincing in the second half of the calendar year. With unprecedented interest rate reductions by the Federal Reserve totaling 250 basis points this year already, the effect on consumer purchases of real estate and large ticket retail goods may not be as noticeable during the summer months.

Southern California will produce the most jobs in the State this year, principally from hinterland regions surrounding Los Angeles County. Job growth is predicted to rise 2.5% in Southern California and 2.3% elsewhere in California.

Other areas of California will take the lead in new residential development this year. Most of the new housing will be built in the Central and Sacramento Valleys, Northern Los Angeles County and the Inland Empire Counties of Riverside and San Bernardino.

More commercial and industrial development will occur in Southern California in 2001. There will also be a large increase in office, retail and renovation activity in the San Joaquin Valley this year.

California’s economy is poised to remain stronger than much of the nation, as it is more diversified than other states. The threat of a Screen Writers and Actors Guild strike that would have threatened the L.A. region has been resolved. Labor markets will remain tight in 2001, principally because labor force growth is so anemic. The housing crisis will keep builders busy and low interest rates will make California housing slightly more affordable, maintaining demand. The risk to the forecast is a deteriorating stock market, a much hotter-than-normal summer, unanticipated energy conditions and a relapse of weakening consumer and business confidence. ❖

Controller’s Economic Council: Forecasts for 2001

May 2001

Council Member	Representative	Employment growth (percent)	Unemployment Rate (percent)	Personal Income Growth (percent)	Residential Building Permits (in thousands)
California Association of REALTORS®	Robert Kleinhenz	2.0	5.2	5.5	145
California Economic Forecast Project	Mark Schniepp	2.4	5.1	5.7	155
LA County Economic Dev Corp	Jack Kyser	2.3	5.3	6.0	152
The Milken Institute	Ross DeVol	1.9	4.9	4.7	146
Munroe Consulting	Tapan Munroe	1.8	5.3	5.7	150
UC Berkeley, Center for RE & Urban Econ	Cynthia Kroll	1.8	5.5	6.2	145
UCLA Anderson Forecast	Tom Lieser	2.4	5.0	4.9	154
Mean		2.1	5.2	5.5	150
Median		2.0	5.2	5.7	150
State Controller		1.9	5.0	5.1	145
2000 Actual		3.8	4.9	11.5	148

Source: State Controller’s Office: Council of Economic Advisors

The Energy Crisis in California

This year, Californians are facing sharply rising prices for electricity, natural gas, and gasoline. Rolling blackouts throughout the State are a definite threat this summer with growing anger and frustration by consumer and business groups over the relatively sudden energy mess and the lack of long-term solutions. How did things deteriorate so quickly? How can this energy debacle be explained? Is there any relief in sight over the next 6 to 12 months?

Consider the following:

The demand for electricity depends on the weather. It was cold this past winter in the United States. November and December were the coldest months since records have been kept. Energy reserves nationwide were scarce and California was faced with high wholesale power prices. If the State experiences average temperatures this summer, energy supplies will be adequate, resulting in minimal shortfalls at peak demand. However, a hot summer will mean more shortfalls, which will translate into more frequent blackouts.

The market for electricity and the mechanism for buying wholesale power from providers has been in a state of disruption. The continuing question is how California power companies can meet demand by selling low in the regulated retail markets and buying at high prices in the unregulated wholesale market. The State is now working on solutions that would enable it to buy wholesale power and sell it to the utility companies at prices that accommodate the regulated retail market. To date, this approach has not been successful.

Electricity: Why the shortage?

The California economy has realized impressive growth since 1995. Energy demand has grown in tandem with the economy, but the supply side has not kept pace with expanding demand. Since 1994, no new power plants have been certified and expansion of existing plants has been limited. Though these are compelling reasons for the potential imbalance between supply and demand, they are not the only reasons or the most persuasive ones.

The brunt of the problem is the structure of the industry in California. The restructuring of the California electricity market was enacted to improve the efficiency of the industry. However, it has had the opposite result. The 1996 deregulation act proposed that wholesale electricity markets were to completely deregulate to encourage competition in providing power in the State. The same deregulation did not apply to the retail market. The California Public Utilities

Commission (CPUC) continued to set consumer rates.

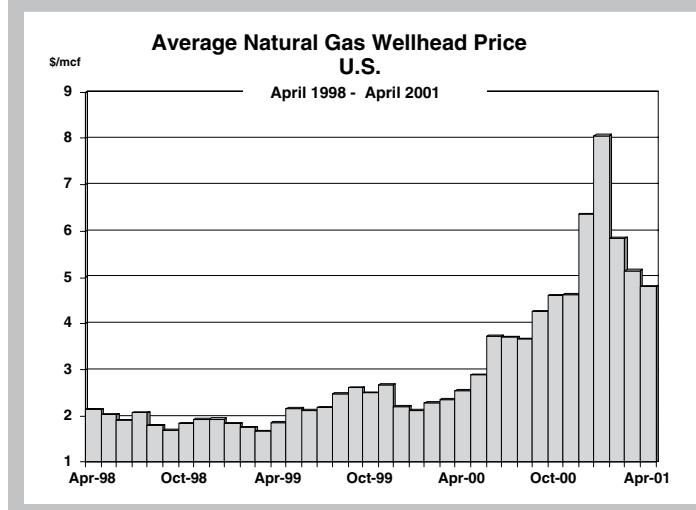
The deregulated market worked comfortably for two years. Wholesale prices for natural gas were well-behaved and the utility companies could generate power or import power for less than they could sell it for in the retail market. However, capped retail rates in California discouraged other wholesale providers of power from entering the California electricity market. Hence, wholesale competition was not materially improved and additional supplies were not made available to the State.

In-state electricity providers were precluded from entering into longer-term contracts with power wholesalers. Whatever power the utilities did not generate themselves had to be purchased in the spot market. Spot market prices were uncertain and the utilities faced considerable risk.

This risk, combined with the selling of power in a regulated retail market, discouraged power plant construction and additional infrastructure investment

“Energy demand has grown in tandem with the economy, but the supply side has not.”

Figure 6



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from electric utility companies. Few market players would participate in the potentially risky spot market for electricity, principally PG&E and Edison, and not necessarily by their choosing.

Natural gas prices increased sharply last autumn, peaking in January and February of this year (Figure 6). When spot prices for electricity jumped last autumn, California power providers were forced to purchase power at a deregulated price they could not pass on to consumers in the regulated market. Since most electricity generating plants in California are fueled by natural gas, the increasing price of natural gas last year caused a further bump in wholesale prices for in-state power. Yet, consumer rates were not allowed to rise to offset the higher cost to generate electricity in California. As a result, utility companies suffered unprecedented losses.

Energy Debate: What's the solution?

Many have argued that increasing the number of power plants is the only solution to the energy crisis in California. Others propose that energy

generators are keeping the retail prices artificially high, generating tremendous profits. Some allegations suggest that the generators are keeping some production capacity off-line intentionally to increase the price paid by consumers. Still other experts suggest rising demand must be curbed through conservation efforts to resolve the current problems.

Here are the facts:

Demand Side

Between late 1999 and the spring of 2000, the average electricity demand, recorded by California Independent System Operators (CAISO, who incidentally services over 80% of the State demand), grew slightly but steadily compared to demand in 1998. In August 2000, an average high was reached of about 31,000 megawatts, the highest average in two years (Figure 7).

However, electricity usage to date in 2001 has been lower every month compared to a year ago. Moreover, peak electricity usage was lower in the first four months of 2001 compared to the same period last year. Even the peak demand for electricity in the summer months of 2000 was lower than the peaks in the

summer of 1999. The highest peak demand so far recorded by the CAISO was about 45,000 megawatts on July 12, 1999. In general, electricity usage has increased less than 2% per year since 1995 and peak electricity usage has dropped since 1998. California is not experiencing a scenario of runaway demand for power due to economic growth.

However, peak demand could grow more rapidly this summer, if hotter-than-expected weather prevails in California.

Supply Side

Rolling blackouts are ordered because of expected inadequate supply. How inadequate are these supplies and how long is the threat of rolling blackouts going to persist? According to the California Energy Commission (CEC), California alone has the capacity to produce between 53,000 and 55,000 megawatts at any one time. Approximately 6,000 megawatts are imported when needed. Theoretically, California has about 60,000 megawatts to cover its electricity needs.

Sixty thousand megawatts appears adequate given the fact that peak demand reached its highest point in July 1999 with about 53,000 megawatts. Technically speaking, rolling

"In general, electricity usage has increased less than 2% per year since 1995."

Figure 7

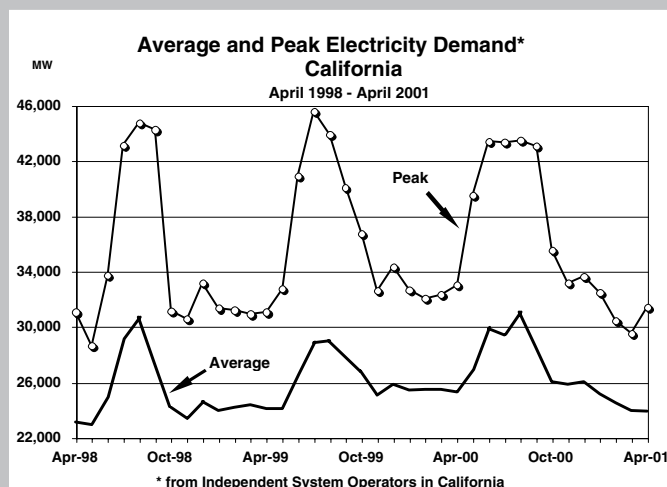
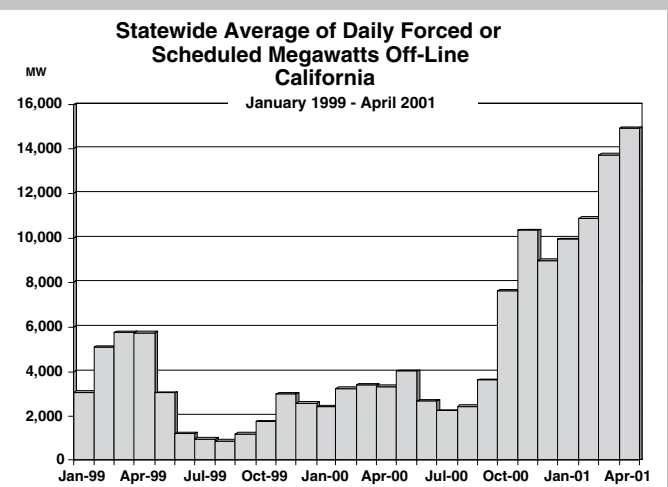


Figure 8



blackouts are not justified as electricity generating capacity, or supply, exceeds demand.

However, the problem is in fact supply-oriented as power plants with producing capacity are not always online, needing to be shut down for repair, maintenance or expansion.

Through the summer of 2000, between 2,000 and 6,000 megawatts were off-line due to forced or scheduled maintenance of power plants. Since the summer of 2000, total off-line capacity has exceeded 10,000 megawatts every month. The peak off-line capacity was reached in April 2001, totaling 14,000 megawatts (Figure 8).

What can we expect this summer?

Will rolling blackouts persist this summer in California? Additional generation will soon be a reality in California. Currently, nine power plants are under construction with a capacity of more than 300 megawatts each. The CEC predicts an additional 5,000 megawatts will be online this summer. Thus, a total of about 60,000 megawatts are forecast to be available this summer, including imports and allowing for the historical

average of off-line power.

According to the CEC, a peak demand of 57,600 megawatts is forecast with a probability of 1 in 10. A more likely scenario is a peak demand of about 55,000 megawatts, which translates to reserves of about 5% during the summer (Figure 9). Five percent reserves implies a Stage I or Stage II alert. There is a probability, however, that the additional 5,000 megawatt capacity from new plant expansions may not be online in time to meet peak demand. That translates into a Stage III alert and rolling blackouts.

The outlook for areas served by the Independent System Operators (ISO) is more pessimistic this summer regarding supply shortages. The CEC predicts that the ISO alone will face a peak demand of about 48,000 megawatts this summer, compared to a maximum peak of 45,800 megawatts in summer 1999. Forecasts of supply range between 45,000 to 49,000 megawatts during maximum demand peak. A resource deficiency ranging from about 1,000 to 3,000 megawatts during the summer months of June through September is therefore a possibility.

The answer regarding blackouts depends on the weather, at least in the short run.

What about the long run?

A total of 15 power plant expansions providing a combined 11,000 megawatts in new capacity are currently approved in California. Nine of these projects are currently underway. Twelve more new power plant applications are currently under review. Considering these approved and pending projects, the electricity shortage should not persist in the long run and could be resolved at least partially by the summer of 2002.

The California/Oregon electricity futures market on the New York Mercantile Exchange incorporates this information on supply into the futures price. The price per megawatt hour is forecast to decline (and sharply) over the ensuing months following the summer of 2001 (Figure 10). With current information on probable supply and demand conditions in the Western United States, wholesale prices for electricity are expected to decline over time.

The same is true for natural gas prices in the United States. The natural gas futures price (for

“Electricity usage to date in 2001 has been lower every month compared to a year ago.”

Figure 9

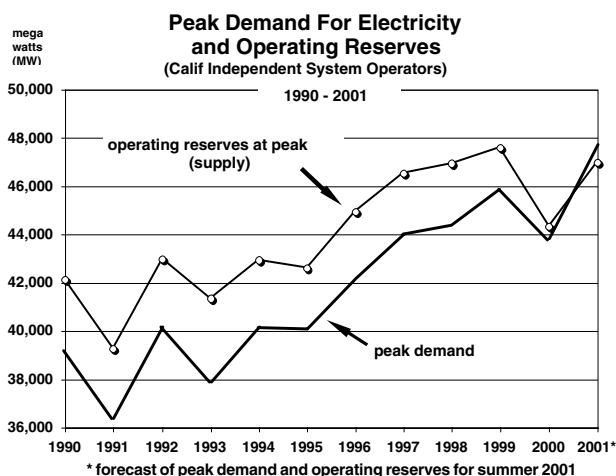
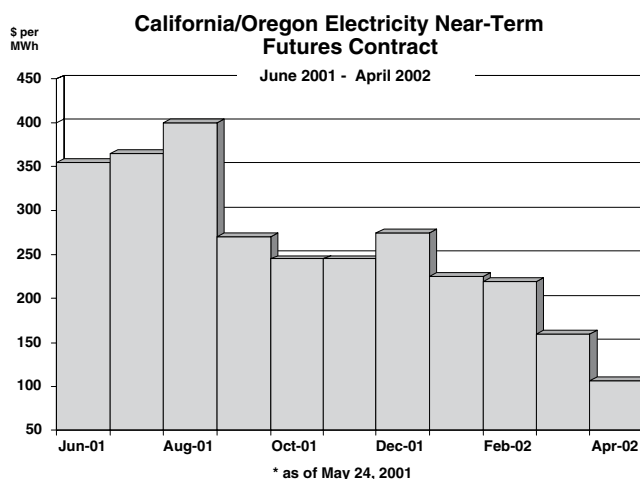


Figure 10



“Higher approved retail electricity rates will provide a significant conservation incentive for consumers.”

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Henry Hub delivery) shows no spike in prices for the next two years. Prices remain contained in the 4.4 to 4.9 cent range, significantly below the 6 to 8 cent range observed on the spot market this past winter.

California currently faces an energy shortage, but higher approved retail electricity rates will provide a significant conservation incentive for consumers. Longer term, higher electricity rates will produce significant changes in energy demand. Also in the longer term, greater electricity generating capacity will be available to California users. Increased capacity or supply will, in turn, lower electricity prices in the State and the nation.

Gasoline and Crude Oil

Gasoline prices are currently rising and sharply. In May 2001, consumers paid on average \$1.70 per gallon across the country. The California retail price averaged \$1.10 a gallon in February 1999. By May of 2001, the average price reached \$2.02 in California. Higher costs for crude oil and higher refining costs are responsible for the recent rise of gasoline prices

over the last two years. Indeed, the price of West Texas Intermediate crude oil rose from February to November 2000, reaching a peak of \$34 a barrel (Figure 11).

Comparing California and national average retail gasoline prices over the last 27 months (February 1999 to May 2001), the price in California has always been above the national price.

California's electricity shortage also contributes to supply-side problems. During blackouts, pipelines are not able to pump gasoline out of storage facilities. This further increases the price of gasoline in California.

Since November 2000, oil prices have been in decline. However, the average price of gasoline has remained high. The Crude Oil futures market indicates a less volatile price future for the commodity with, perhaps, some short-term increases eclipsing \$30 a barrel by next October. Consequently, relief in California retail gasoline prices is unlikely. An expected national shortage of operating refinery capacity this year may further drive up gasoline prices in 2001, but that condition is temporary (Figure 12).

Impacts on California this summer

Rolling blackouts this summer will have serious but not devastating effects on California businesses. Rolling blackouts will result in business interruptions, higher costs and in some cases, reduced profits.

However, with the early warning system now being devised by the CAISO, electricity-intensive businesses and institutions will have advance notice for planning and preparing their production processes and their customers for an imminent shut-down in operations. Moreover, backup generators can be placed into service more effectively without any power interruption during the one-to three-hour outage.

In view of the analysis presented, the supply of electricity should only increase in California over time. Prices for power will remain high through the summer months, decline in the autumn, rise in the winter months of 2001-02 and begin a decline that should continue unabated through the remainder of 2002. ❖

Figure 11

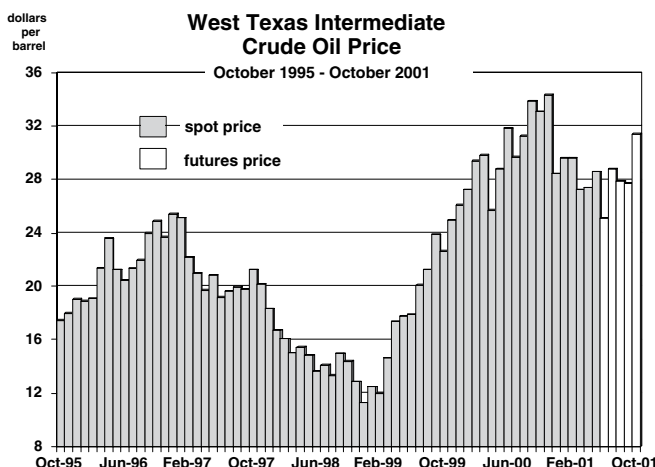
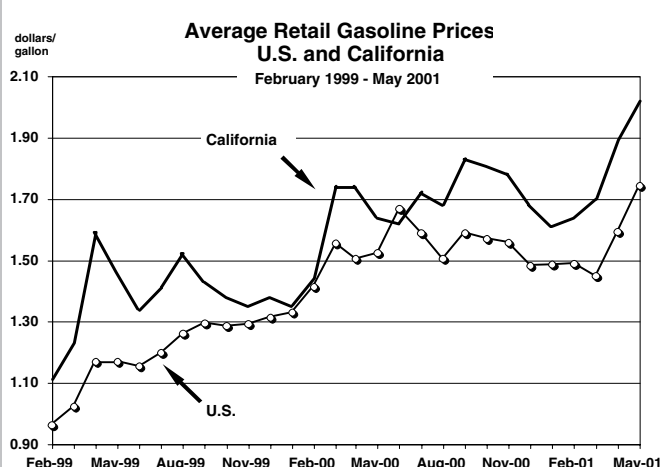


Figure 12



A New Beginning at the End of the Line: Managing the Energy in 'The City that Knows How'

By
Mayor Willie L.
Brown, Jr.

San Francisco is a destination point for people throughout the world. The cultural and physical amenities of the City by the Bay make it a magnet for businesses, workers, students and tourists, keeping California's economy on the move. But San Francisco is also at the end of the line. Its location at the tip of a peninsula makes it vulnerable to disruptions in vital utility services, particularly electricity.

San Francisco currently imports about 60% of its power over a single transmission path running up from the south, through San Mateo County. The possibility that power flowing along this path could be interrupted means that San Francisco must have a substantial backup supply of power plants located in or around the city to assure reliable service.

The power plants currently located in San Francisco are old, dirty and relatively inefficient and they are concentrated in low-income neighborhoods. They need to be replaced soon.

San Francisco experienced an almost total blackout in December 1998, triggered by a problem at a transmission substation in San Mateo County. That outage clearly pointed to the need for new investments in power facilities – a challenge given San Francisco's compact

area and progressive politics. Even under favorable circumstances, the quick development of new transmission lines to prevent a repeat of this incident would be daunting.

The bankruptcy of PG&E makes the challenge even tougher. A recommended new high-voltage power line to be developed by PG&E will likely be delayed, along with much-needed reinforcements of the low-voltage system within San Francisco. This is particularly troubling, since the California Public Utilities Commission has shown that localized electric outages in San Francisco have increased over the last decade while PG&E's investments in infrastructure diminished.

Being at the end of the line also means that shortages of electricity elsewhere in California will likely impact San Francisco. Even with all of the in-city power plants running, even with lower power consumption than neighboring areas, San Francisco will still face the possibility of rolling blackouts when the weather heats up in California.

Unfortunately, the "humpty-dumpty" deregulation policy put in place by the State in 1996 increases the likelihood that power shortages will occur this summer. That's because the out-of-state companies that now own many of California's power plants have discovered they can make greater profits by strategically withholding power generation, forcing prices higher – particularly during periods of peak demand.

California now finds itself virtually powerless to prevent this kind of market manipulation, which can result in blackouts. The Governor is forced into an uphill battle with the Federal Energy Regulatory Commission

to enforce the law and ensure that wholesale electric rates are just and reasonable.

San Francisco is taking important steps to maintain reliable electric service this summer and become more self-reliant in the future. We have set a goal of having each city department reduce electricity consumption by 15% and take additional extraordinary steps during power alerts. The City has cleared the way for the development of a large power plant at the San Francisco International Airport that will produce reasonably priced electricity and reduce the likelihood of an outage from a power line failure.

A plan is also being put in place to develop clean renewable energy sources, including the use of bio-gas at the City's wastewater treatment facilities, the development of new wind generation in nearby mountain passes and the installation of rooftop solar panels in parts of the City with the best solar exposure.

To assure longer-term reliable electric service at affordable prices, the City is beginning the process necessary to acquire PG&E's electric distribution system. In the near future we will develop a detailed analysis of the value of PG&E assets in San Francisco and initiate negotiations with the bankrupt utility.

City ownership of the electric distribution system will allow the City to put in place an integrated approach to planning for the upgrade and improvement of electric service. An integrated approach will allow for investments in customer energy-efficiency measures and small-scale "distributed" generation as alternatives to rewiring and other

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equipment replacement. Integrated planning for the electric distribution system will result in a least-cost means of improving electric service, an approach that PG&E is now prohibited from implementing under the current regulatory regime.

Important new power technologies such as microturbines and fuel cells are becoming available and will make it possible to provide clean and efficient generation much closer to customer loads. Many of these facilities will be able to produce both heat and power, lessening demand for natural gas and reducing emissions of greenhouse gases that are triggering global climate change.

Given San Francisco's geographical location at the end of the power line, it is vital that the City take control of the electric distribution system so it

can take advantage of technological advancements and keep itself at the center of the new economy. ❖

Willie L. Brown, Jr. is currently serving his second term as the Mayor of San Francisco. Prior to being elected mayor in 1996, he served as a member of the California State Assembly, including fifteen years as the Assembly Speaker.

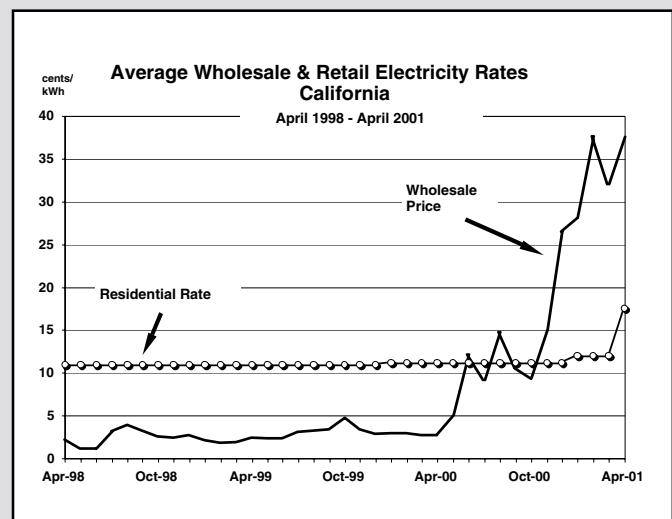
Power Prices Surge in California

In November 2000, wholesale rates jumped from 10 cents to approximately 30 cents per kilowatt-hour (kWh). On the other hand, retail electricity prices were capped and averaged 11 cents per kWh. Electricity utilities were faced with wholesale prices that were three times the rate at which they could sell per kWh to their customers.

In early 2001, the public utilities warned the Governor's office and the California Public Utilities Commission that if this condition persisted, they would go bankrupt. In March of this year, PG&E filed for Chapter 11 creditor protection. The CPUC then ordered a substantial increase in rates paid by consumers to public utilities "in order to keep the lights on." Most residential and commercial customers will now incur increases of between 40% and 80% in their electricity bills, retroactive to March 28, 2001.

Since the current supply is inadequate to meet the statewide demand at current power rates, rolling blackouts are now ordered whenever the reserves fall below 1½%.

Source: California Economic Forecast Project



California Gasoline: The Return of Refiner Profits

By
Richard Gilbert,
Ph.D.

The average retail price of a gallon of branded regular gasoline sold in California surged from about \$1.60 per gallon at the beginning of the year to almost \$2.00 per gallon by the Memorial Day weekend. Since 1998, California gasoline prices have increased by more than 15% per year. Consumers are outraged. What are the causes of these price increases? There is no shortage of culprits: the OPEC cartel, gas-guzzling SUVs, oil mega-mergers and environmental restrictions are some of the usual suspects.

A better understanding of the causes of the spike in gasoline prices can be gained by considering each of the factors that contribute to the cost of gasoline at the pump. The price of a gallon of gasoline has four basic components:

(1) The cost of the crude oil feedstock

Crude oil prices are quoted in dollars per barrel. A barrel is equivalent to 42 gallons and a common assumption is that it takes a gallon of crude oil to manufacture a gallon of gasoline.

(2) The margin earned by refiners

The refiner margin is the difference between the average wholesale price of gasoline sold to retailers and the price per gallon of crude oil feedstock.

(3) The margin earned by retailers

The retail (or dealer) margin is the difference between the average retail price of gasoline and the average wholesale price.

(4) Taxes

Taxes include state and local sales taxes, state excise tax and federal excise tax.

Table 1 compares the average contribution to the price of a gallon of gasoline for each of these factors in January and May of 2001:

The average price of branded regular gasoline increased by 35 cents per gallon from January to May of 2001, an increase of 22%. Higher crude

oil acquisition costs for California refineries added seven cents to the price of gasoline per gallon. Taxes added another two cents. Clearly, the most significant component in the rise of prices from January to May of this year was the refiner margin, which added 27 cents to the price. The increase in the refiner margin is typical of the trend over the past few years. The refiner margin in California increased from 32 cents per gallon in 1998 to 39 cents in 1999, 42 cents in 2000 and 58 cents in 2001 (Figure 1). The refining of gasoline has been an unusually profitable activity in the past year.

John D. Rockefeller created the Standard Oil trust in the late 19th century by controlling the key assets of petroleum refining and transportation. The rush for black gold periodically sent prices plunging and Rockefeller benefited as a net buyer of crude oil. The profit centers in the gasoline industry changed dramatically over the course of the 20th century, moving to crude oil production as overcapacity in refining eroded profits in this sector. Times have changed. Whether oil companies are making profits that are excessive, or merely above depressed levels of the past, can be debated *ad*

“The most significant component in the rise of prices from January to May was the refiner margin.”

Table 1

Components of the Price of a Gallon of Branded Regular Gasoline in California*
(\$ per gallon)

	January 2001	May 2001
Crude oil	\$0.57	\$0.64
Refiner margin	0.39	0.66
Retail margin	0.15	0.15
Taxes	0.48	0.50
Total price per gallon**	\$1.60	\$1.95

* Source: California Energy Commission

** May not sum due to rounding

“With respect to gasoline, the California market is an island.”

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infinitum. California refiners have been able to earn much higher profits because California gasoline supply is tight relative to demand. The popularity of gas-guzzling behemoths no doubt has contributed to the supply-demand squeeze. Gasoline demand in California has increased from 13.8 billion gallons in 1997 to 14.8 billion gallons in 2000. No new refineries have been built in California to serve the growth in demand, several smaller refineries have closed and additions to existing refinery capacity have not kept pace with the increase in gasoline demand.

Gasoline prices have increased across the nation, but are still well below the prices paid in California, adjusting for taxes. The main difference between California gasoline prices and the prices paid elsewhere in the nation can be traced to the margins earned by refiners. Over the period of January 2000 to May 2001, the average refinery margin for gasoline sold in the Gulf Coast averaged 16.6 cents per gallon less than the refinery margin for gasoline sold in California. A portion of this price difference (perhaps 5 to 8 cents per gallon) can be attributed to

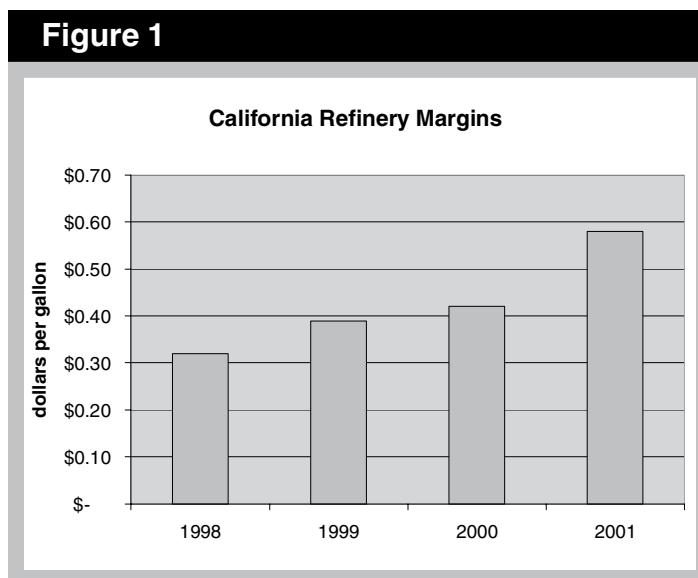
stricter emissions requirements imposed on gasoline sold in California. Californians pay a price for the cleaner-burning specifications required by the California Air Resources Board. Environmental regulations impose obstacles for new refinery construction and raise the cost of retail facilities, which also adds to prices paid at the pump. But even after making generous allowances for the cost of California's cleaner gasoline and for other factors, such as higher taxes, there is still a substantial premium that Californians pay for gasoline relative to the rest of the nation. Why is this so?

With respect to gasoline, the California market is an island. California's tight specifications for reformulated gasoline sold in the State and limited pipeline interconnections across the State's borders isolate the California gasoline market from gasoline markets in the rest of the country. Competition among gasoline refiners is limited in California's island economy. There are six major refiners in California with a combined crude oil processing capacity of 1.7 million barrels per day. A handful of other, smaller refiners contributes another 200,000

barrels per day of capacity. The terminals that supply wholesale gasoline to California cities have an average of three refiners that sell gasoline at arm's length to any dealer. As a comparison, gasoline terminals in the Gulf Coast states of Texas and Louisiana often have more than seven refiners that sell to any dealer. Research I have done with my colleague Justine Hastings suggests that the heightened competition that exists at these Gulf Coast terminals likely lowers refiner margins by three to five cents per gallon. Gulf Coast refiners also supply a large network of independent gasoline marketers. There is statistical evidence that competition from independent retailers also tends to lower wholesale prices and further squeezes the refiner margins. The larger network of independent retailers likely accounts for another one to three cents of the difference in the refinery margins between California and the Gulf Coast.

The number of independent refineries and the share of independent gasoline retailers in California dwindled over the past decade as the industry restructured through mergers, shut-downs and exits. Some of the changes in the structure of the California refining industry have been responses to the cost of meeting the stringent specifications of California reformulated gasoline. The industry restructuring events that occurred over the past decade — motivated in part by environmental constraints — contributed significantly to the higher prices that Californians pay for gasoline. The phase-out of MTBE (an ingredient used to manufacture reformulated gasoline) will put additional economic pressures on California's refining industry. ♦

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California's Deregulation Disaster – A Consumer Advocate's View

By
Harvey Rosenfield
and Douglas Heller

When state lawmakers voted unanimously to deregulate California's electricity supply in 1996, consumers were promised a 20% rate reduction, lower taxes, competition and consumer choice. Those were the buzz words, perfected by focus groups, by which a radical departure from a nearly 100-year-old system was marketed to the press and the public. Indeed, when California became the first state in the nation to lift government oversight of electricity prices and production, it was the culmination of a carefully orchestrated, two decade-long campaign by the energy industry that began in the early 1980s and included the elimination of federal controls over natural gas.

Today, California is on the precipice of economic disaster. Electricity prices have risen 1,000% since last year. Rates have been increased by an average of 49% since January of this year. The State's largest utility, PG&E, is in bankruptcy, with Edison not far behind. Both are begging lawmakers to order an additional \$12 billion in rate increases to bail them out, the cost of which would mean still another 40% increase in our monthly bills. Over \$8 billion of taxpayers' money has been used by the State since January to purchase electricity from the handful of energy companies – mostly from out-of-state – that have seized control of our power plants and are manipulating the

supply of electricity in order to maximize profits. This summer, when supplies are traditionally tighter, these companies may double or triple their prices yet again, forcing the average monthly residential utility bill to reach \$600 or more, while the energy industry is warning us to expect rolling blackouts on a near-daily basis. The wholesale price of natural gas – used by many homes and businesses – is 170% higher in California than on the East Coast. It, too, is controlled by the energy cartel. As the *coup de grace* to California's car-driven culture, oil companies have used their control of the refinery spigot to push gasoline prices at the pump to astronomical levels.

Welcome to the world of deregulation, the single greatest public policy mistake in California history, rivaled perhaps only by the State's pioneering deregulation of bank savings and loans in 1983. Just as that ingenious idea spread throughout the nation, ultimately costing American taxpayers hundreds of billions of dollars, numerous other states followed California's lead on electricity deregulation and are already beginning to pay the price. New York has seen 43% price increases and faces summer blackouts. Pennsylvanians paid \$12 billion in excess charges under deregulation, with more rate hikes coming. In Massachusetts, PG&E is being accused of the very price-gouging that brought its utility company to ruin in California.

The Deregulation Ideology vs. Reality

The collapse of deregulation in California has driven the energy industry propaganda machine into desperate overdrive, faced as it is by the threat that greed will have killed the goose that laid the golden egg before all 50 states are deregulated.

According to the industry, California's problem is not deregulation, but not enough deregulation. "California deregulated the wholesale market, but kept a regulated price freeze in the retail market," the pro-deregulation forces say. They are correct on the facts, but the conclusion they draw – that "full" deregulation would work – is plainly wrong.

The freeze on retail rates was imposed by the utility companies themselves in the 1996 law. Set at a price level 40% above the then-market price, its purpose was to allow the utilities to surcharge ratepayers to pay off the utilities' bad debts – principally cost overruns in the construction of nuclear plants in previous decades. Between 1997 and the summer of 2000, the deregulation law handed PG&E, Edison and SDG&E their first bailout – \$20 billion worth. The utilities' holding companies got this cash and, with the proceeds from the sale of some of their power plants, went on a spending spree: buying power plants throughout the world, buying back stock, increasing dividends and executive pay. But last summer, the companies that purchased the California power plants decided they wanted to cash in on the gravy train too. They boosted wholesale prices beyond the frozen price. Suddenly, the rate freeze that the utilities wrote to enrich themselves at the expense of ratepayers was now protecting ratepayers by preventing utilities from passing through the higher cost of power.

If the retail rate freeze was not now in effect, California ratepayers would be paying the full deregulated price of electricity – estimated at about \$600 per household per month. Last summer, San Diego residents and businesses experienced full retail deregulation and were subject to the wholesale cost pass-through because SDG&E had

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“Electricity is too important a commodity to be left to the vicissitudes of imperfect markets... The State must focus on regaining control of wholesale energy prices in the very short term, and control of the electricity system in the long term.”

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recovered all of its prior debts a year earlier than expected. “Real deregulation” happened in San Diego and it led to 300% rate increases, business closures, and hospitals and school districts cutting programs to cover energy costs. It brought the county to the precipice of economic collapse. “Real deregulation” inspired a bipartisan and ongoing movement in San Diego County to shelve the market system and create a publicly-owned county-wide utility company.

State legislators should have known better than to trust the legions of economists, academics and policy experts unleashed by the utility and energy companies to lobby for deregulation under the thin veneer of scholastic inquiry. While the “free market” can work superbly if there is adequate competition, policed by enforcement of the antitrust laws, it simply makes no sense for some services (police, fire, national defense are other examples). Indeed, as California has witnessed first-hand, electricity suppliers have more to gain by keeping supplies tight than by building the extra power plants that would keep prices down and assure a steady supply of electricity. (Guaranteed reliability requires a 20% reserve of electricity, so when the weather changes or a plant goes down we are capable of maintaining affordable service). The utility companies have consistently lobbied state and federal agencies to disapprove construction of new plants.

Electricity is too important a commodity to be left to the vicissitudes of imperfect markets. Which is why, nearly 100 years ago, California chose to treat utility companies as heavily-regulated monopolies—and why cities with publicly owned power companies are experiencing none of the

blackouts and skyrocketing prices that have befallen the rest of California.

Solutions to the Crisis

The push for deregulation was driven by the energy industry’s ideology. Solving the crisis caused by deregulation requires practical solutions. Given what deregulation has done to our economy and our electric bills and knowing how expensive it will be for Californians to fill up their tanks this summer and pay gas heating bills next winter, the State cannot afford the luxury of allowing ideology or political concerns to dictate the response of policymakers.

Neither a bailout (as proposed by the utilities), the issuance of \$13.4 billion in State bonds to cover power purchases (as enacted by the Legislature at the request of Gov. Davis), nor the laissez-faire policy of the Bush-Cheney administration will do anything to resolve the immediate problem: eight energy companies that control a third of the State’s power supply have become a cartel in whose hands deregulation has become a license to steal. The State must focus on regaining control of wholesale energy prices in the very short term and control of the electricity system in the long term.

The only way to protect the Golden State from an imminent economic and public safety disaster is to force the energy wholesalers to cease their manipulation of electricity supply and reduce their prices. The Federal Energy Regulatory Commission (FERC) has the responsibility to order cost controls and rate reductions, but FERC and the Bush-Cheney administration are too entwined with the energy industry and enamored of deregulation to do so. The State’s options are harsh, to be sure, but warranted in light of the gravity of the

threat. One is to impose a windfall profits tax on the generators; such legislation has passed both houses of the Legislature. If this fails, the State will have to exercise its power of eminent domain to seize the plants, at least temporarily. Paying the fair value for these facilities would be a bargain: In the last six months, California has already spent twice as much on power as the \$3.2 billion price the cartel paid to buy the plants from the utilities. Perhaps the energy cartel would choose to lower its prices to fair profit levels rather than pay a windfall profits tax or lose their plants altogether.

A long-term plan to restore a reliable and affordable electricity system is already underway. Governor Davis has signed into law the Consumer Power and Conservation Financing Authority, a public power system that is designed to become the principal long-term energy provider for California. The 2,000 public power systems in this country provide a reliable supply of power at a price that averages 15-20% lower than that charged by regulated private utilities. L.A.’s DWP electricity prices are ten times lower than the current extortionary price under deregulation, and DWP’s customers are not threatened with blackouts. Finally, the Legislature should encourage California’s substantial native business and entrepreneurial talent to develop 21st century alternative energy and conservation technologies. ❖

Harvey Rosenfield and Douglas Heller are consumer advocates with the Foundation for Taxpayer and Consumer Rights. An extensive analysis of deregulation, the energy crisis and necessary solutions can be found on its Web site, www.consumerwatchdog.org.

What's an Irate Ratepayer To Do?

By
Medea Benjamin

I had lunch at St. Anthony's Church today, where they give out hundreds of free meals every day. I sat next to John Dover, a part-time painter making \$6.50 an hour, who told me his energy bill had gone up to \$300 for the \$1,000/month apartment he shares with a friend. The bill put him over the edge, and by July he will be homeless. On the other side of me was Robert Harper, who works as a cook. When I asked Robert if he was affected by the energy crisis, he said the owner of the restaurant was trying to save money by turning off the kitchen fan, making his time at work hot and miserable. Finally, across the table were two friends, Donna Miller and Betty Lewis. Donna was a heroin addict and Betty was trying to get her friend into a methadone treatment center, but due to State budget cuts, there is now a long waiting list. Donna, it appears, is another victim of the billions of dollars of State budget money going to the generator companies instead of to social services that would better the lives of the people of California.

My conversations at the lunch table reminded me of the concrete ways between budget cuts and rising rates this crisis is devastating to the poor. And when ratepayers who live in the territory of the investor-owned utilities get socked this summer with the largest rate increases in this State's history, the impact will worsen. This is especially true for larger households and

for seniors who tend to stay home more and therefore use more electricity. Their bills will skyrocket by up to 80%.

Sure, there are some programs run by the utility companies or the Salvation Army that offer some relief. But it is partial assistance (as little as a 15% discount) and most low-income people don't even know these programs exist.

Furthermore, it's not just low-income households that are hurting. Small businesses that squeeze by with a razor-thin profit margin are either going out of business or being forced to pass their increased costs on to consumers. As the summer rolls in, more and more businesses will either go under or move out of the State.

Little wonder so many Californians are irate that they are being forced to pay for the gross mismanagement of the utility companies and the greed of the energy companies that are manipulating the supply of electricity, charging outrageous wholesale prices and reaping exorbitant profits. While energy use since 1999 has increased by a mere 4%, profits of the energy companies have been astronomical. In the first three months of 2001, Houston-based Dynegy posted revenues of \$14.2 billion, nearly triple the \$5.3 billion reported in the same period a year ago. Enron's revenues from January through March nearly quadrupled to \$50.1 billion, compared to revenues of \$13 billion in the first three months of 2000. Compare this to the California Public Utility Commission definition of fair rates when it was regulating utility rates: cost plus 10-12% profit!

It is obvious that the Federal Energy Regulatory Commission (FERC), which has a legal mandate to ensure that wholesale electricity prices are "just and reasonable," is not doing its job. It is also obvious that President

Bush, who has tremendous sway over the FERC because members are political appointees, refuses to place controls on wholesale rates.

That's why we as ratepayers and taxpayers are organizing to demand that the FERC act to ensure that rates bear a reasonable relationship to production costs and don't cause undue hardship for the innocent victims of this crisis (i.e., residential customers, small businesses and the California economy). If the FERC refuses to act, we must pressure the legislators in Sacramento to pass a windfall profits tax. Or better yet, pressure Governor Davis to use his power of eminent domain to take over plants that have been manipulating supply.

In addition to fighting for affordable rates, we need to build an energy system that is clean and green. The time has come to wean ourselves from polluting fossil fuels and unsafe nuclear power and instead shift massive resources into clean, renewable energy such as solar and wind. In the past, renewables have had to compete in an energy market heavily slanted, through subsidies and tax incentives, toward fossil fuels. We must redirect incentives to favor renewables. Statewide, we need to commit ourselves to having at least 20% renewables by the year 2010.

And while Vice President Dick Cheney disparages conservation as merely a personal virtue, conservation and efficiency must be critical components of our energy policy. We can tap the fastest, cheapest and most plentiful source of energy by increasing efficiency and conservation. California could save enough electricity to power two million homes simply by upgrading old home appliances.

By increasing renewables, efficiency and conservation, we can meet our energy needs while

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reducing global warming and pollution and their damaging impacts on our health.

So how do we get to a system of clean, affordable power? In the long term, we get it by achieving public ownership of our energy system. Public power is not a new or radical concept. It already exists in Nebraska, in over 2,000 cities in the United States and in 31 municipalities in California, including Sacramento and Los Angeles. Here in California, public power has provided, on average, rates that are 20% lower than investor-owned utilities and has run better programs supporting conservation and the use of renewable sources of energy.

If we truly want to put the needs of our people and the health of our environment before the greed of a handful of corporations, we must seriously organize. The good news is that this is starting. Consumer advocates, environmentalists, union folk, churches, business owners and distressed individuals are organizing throughout the State to take actions for a clean, affordable system under public control. You can join us by logging on to our Web site, www.powertothepeople.org or calling Global Exchange at 1-800-496-1994. ❖

Medea Benjamin is the founding director of the San Francisco-based corporate accountability group Global Exchange.

Crisis Transmits Powerful Need for Energy Review

By
Tapan Munroe

In the last several years, 24 states including California have adopted competition in the electricity industry. California's electricity crisis—embodied by weeks and weeks of Stage III alerts in the middle of winter—has raised legitimate concerns about the effectiveness of deregulation programs in various states. There is even rising sentiment about rejecting competition in the electricity industry.

In my assessment, California's botched deregulation plan should not be the benchmark by which we assess the desirability of introducing competition in electricity markets. Experience of other states (e.g., Pennsylvania and Massachusetts) and other countries (e.g., U.K. and Australia) suggests that it is entirely possible to make electricity deregulation work and reap benefits of competition for society in general. California's painful experience can provide valuable lessons for the rest of the United States, especially in the following four areas.

Generation

No new generation of any significance has been built in California in more than a decade, despite expectations of high electricity demand resulting from a booming economy. Reasons for this faux pas include stringent environmental regulations, stringent siting rules, a liberal dose of not-in-my-backyard-ism

and the uncertainties surrounding deregulation. The obvious consequence of the growing disparity between supply and demand has been a declining reserve margin and the onset of Stage III alerts and rolling blackouts in the State reminiscent of many Third World economies. To reverse this trend we need to:

- Offer incentives for building new power plants;
- Make power pricing transparent, as this will provide incentives for building new power plants;
- Avoid the use of long-term price caps;
- Develop fast and efficient permitting/siting procedures. Construction time for a power plant in California ranges from one year to 20 months. Permitting adds at least two years to the time. This is a disaster for California's power future in light of the State's supply crisis.
- Encourage the use of a diversity of power plant fuel sources consistent with environmental standards as this is a key to affordable and reliable power;
- Encourage large-scale deployment of alternate power sources including solar, wind and fuel cells;
- Support R&D and commercialization of more efficient and environmentally friendly generation technologies.

Transmission

For many years, California did not generate enough power to light its homes and run the factories. Thus, it had to import power from other states via high voltage transmission lines (the large towers we see in various parts of our landscape). With continued growth in the economy, we will have to import an even larger percentage of our

power from other states, even if we bring power plants on line in the next several years. It is most likely that the State's transmission capacity will become more and more inadequate and transmission bottlenecks will be a serious problem for the California economy. The State currently has difficulty in moving power from the south to the north.

Transmission capacity is not just a California problem; it is a serious national problem. Most transmission systems in the United States were designed to carry power between neighboring utilities—not to carry power between states and regions to support customers in an increasingly competitive market. In other words, they were not designed for their “electrical superhighway” role. The result has been a severe shortage of transmission capacity in many parts of the United States. Unless we solve the transmission problem in the United States, increasing the supply of electricity will not solve our power problem.

- The federal government needs to create incentives to build more transmission capacity in the various regions via tax incentives as well as more attractive pricing. Money will flow into this vital infrastructure area if it makes financial sense for investors.
- Government at all levels must help solve the siting problem in collaboration with communities where they are located.

Conservation

This is the most attractive of all options for alleviating our power problems. Restraining our voracious appetite for using electricity at home, at work and at play is a serious challenge. We can make great progress in solving our energy crisis by using available technology as well as behavior modification to reduce consumption of

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electricity in California and the nation. The State, one of the most energy efficient in the nation, has pursued a wide variety of conservation and demand-side management programs. However, it has failed to use price signals to trigger conservation by enforcing a retail price cap. Fixed prices have failed to transmit signals about power shortages to customers. This has discouraged voluntary conservation over time. In the current California situation, removing price caps would result in catastrophic price increases,

unacceptable for consumers. What may be possible is slow and gradual elimination of price controls over time so the customer eventually pays the market price. To safeguard the use of market power by utilities, as well as encourage the entry of new electricity producers into the market, it is essential that we institute the following:

- Build into the deregulation plan a comprehensive conservation program that includes incentives as well as demand-side management programs, making sure that the utilities

continue to stay with the plan and not deviate from the conservation plan as competition heats up;

- Avoid price caps as much as possible while making sure that impacts of catastrophic price increases on customers are alleviated by special programs for low-income families. A competitive electricity generation industry with open entry into the business will prevent catastrophic price increases under most circumstances.

Impact on the Los Angeles Area Economy

The current and potential impact of the energy crisis on the Los Angeles area economy is shaped by the fact that three local cities—Burbank, Glendale and Los Angeles—have municipal power systems that are not part of the ISO and thus have adequate power at low rates. Also, when discussing the energy situation, the high cost of natural gas has to be factored into the equation. In addition, there will be some “static” caused by the concurrent slowdown of the U.S. economy.

There have already been some visible impacts of the energy crisis on the local economy, with the closure of some textile manufacturers. The most significant was Pico Rivera-based L.A. Dye, which conducted an orderly shutdown of its business at the cost of 700 jobs. Commercial real estate brokers also note an easing in the number of inquiries about space.

The first question is, “Will businesses leave California because of the energy crisis?” There are multiple answers. Larger firms with parallel production facilities in other states have indicated that they are considering shifting production out of the State to other locations. This raises another question: “When the crisis is over, will they come back?” An honest answer is maybe. For small-to-medium sized firms, moving out of California is a daunting prospect, no matter how aggressive recruiters may be. It is expensive, there will be the loss of key personnel, and new supplier relationships will have to be built. What seems to be happening is that firms will streamline energy use and cut costs. They are also looking at shifting their operations into nonpeak hours, to avoid possible blackouts. And frankly, they are also looking at cutting staff. Some firms that operate two shifts have decided to eliminate a shift.

The potential for rolling blackouts has several implications for business, so just mandated “forecasts” provide some welcome relief. Obviously, unexpected power outages cause a loss of materials in process. But there are other critical issues, including the potential for placing employees at risk. The latter is a major concern for high-tech firms that use chemicals in their production process. Finally, some computers used in production processes have a rather lengthy shutdown process, so the forecasts will prevent a time-consuming reprogramming effort.

Another twist in the situation is that Los Angeles area firms selling to out-of-state customers are being asked if they will be able to deliver product on time, “since you are having all those blackouts in California.” There seems to be no knowledge of our three municipal power systems.

What business sectors are most at risk from the energy crisis? Using input-output tables, we have identified activities where electric power and natural gas are significant components of the production costs or operations. In manufacturing, the list includes apparel and textiles, paper products, chemicals, glass and glass products, stone and clay products and metal fabrication. The list also includes hotels and state and local government. For the latter, this unexpected increase in costs is not welcome news, especially in light of the budget problems that state government is facing.

Finally, there is a psychological aspect to the energy crisis. Businesses don’t quite know how to respond, but are frankly scared to death. But for the economic development community statewide, there has been a quick shift from business attraction to business retention. The next few months will be difficult.

Jack Kyser, Chief Economist, Los Angeles Economic Development Corporation

Key Communication Issues

For successful transition to deregulation, it is essential that we understand several factors:

- Electricity is not a free good: generation, transmission and distribution of electricity costs large amounts of money.
- Keeping the environment clean costs money and requires some sacrifices.
- Our economy, our jobs, our incomes and our lifestyles are inexorably linked to supply of reliable and reasonably priced electricity.
- Electricity is the most fundamental infrastructure of

the 21st century—we need to pay a great deal more attention to it than we have in the past. (The California deregulation plan conveys almost a cavalier attitude to this fundamental need of our lives).

- We need to have our best minds working on solving our national electricity problem if we are to maintain our lead in the digital economy and our lifestyle. ❖

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“Fixed prices [have] discouraged voluntary conservation over time.”

A Few Oft-quoted Fallacies About the Crisis

- **Californians Are Energy Hogs**
 - False. Californians use less than half the electricity per \$ of GSP than most of the western states (WSSC). California is in the top four of all states in terms of efficiency.
- **California Has Excessive Environmental Regulations, Stopping New Power Plants from Being Permitted or Constructed**
 - False. The CEC has approved all but two permits, and permitting delays are driven by competitors as much as environmental concerns.
- **California Froze Retail Rates Below Market Prices, Driving the Utilities to Bankruptcy**
 - False. The rate freeze was a floor, not a ceiling, and the rate freeze benefited utilities, not customers, by committing all ratepayers to “repay” the utilities’ “stranded costs.”
- **The FERC Has Not Found Evidence of Illegal Market Manipulation**
 - False. Every study finds significant “market power” and manipulation.
- **New Conventional (Fossil-fuel) Supply Will Resolve the Imbalance**
 - False. Simplistic analysis of supply/demand imbalance leads to supply-oriented solution.
 - Having taken Econ 101 is no substitute for taking (and passing!) Anti-Trust 102.
 - The market is designed to treat Qualifying Facilities unfairly, primarily as “relief valves” for the big utilities, and not as real businesses themselves as they should be in a “fair” market.
- **Wholesale Price Caps Would Discourage New Generation, Exacerbating the Problem**
 - False. Failure to consider price caps reflects a belief that the problem is inadequate supply.
 - There is a failure to distinguish *spot prices* vs. *forward prices* that will induce new entry.
- **Energy Efficiency and Renewable Energy Have Only a Marginal, Stop-gap, Role to Play in Solving the Crisis**
 - False. The U.S. and California have saved billions by investing in energy efficiency.
 - Solar, wind, and biomass energy can provide both *least/low cost* and *high-valued* energy.

—Daniel M. Kammen
Professor of Energy and Society, UC Berkeley

Renewable Energy and Energy Efficiency Policies and the California Energy Crisis

By
Daniel M. Kammen,
Ph.D.

“Statewide, public sector investment in renewable energy generation, combined with increased municipal control of electricity production and retail sales, would offer a better and more meaningful long-term solution to the problems that electricity deregulation has raised.”

In addressing California's energy situation, I am particularly concerned that the current crisis mentality has fostered an ill-founded rush for “quick fix” solutions that, while politically expedient, will ultimately do us more harm than good. It is critical to examine all energy options. The potential for renewable energy technologies and energy efficiency to have a significant positive impact on our energy future is an example of an opportunity that demands far greater examination and commitment to implementation than we have seen to date. It is time to adopt policies that build sustainable clean energy markets.

For many years, renewables were seen as environmentally and socially attractive options that at best occupied niche markets due to barriers of cost and available infrastructure. That situation has *dramatically* changed. Renewable energy resources and technologies – notably solar, wind, small-scale hydro and biomass-based energy, as well as advanced energy conversion devices such as fuel cells – have undergone a revolution in technological innovation, cost improvements and in our understanding and analysis of appropriate applications. Renewable energy options are now in many situations either equal, or better, in price and services provided than are the prevailing coal, oil and gas technologies.

California's energy crisis has focused national attention and raised fundamental questions about regional and national energy strategies. Rising demand suggests the need for new energy supplies and certainly some new energy capacity is needed. However, there is a wide range of options for achieving supply and demand balance and some of these options are not being given adequate attention. Governor Davis is now emphasizing policies that put the State into the position of brokering power purchases. Not only is this unlikely to be economically efficient, it fails to address the underlying problems of market manipulation and under-investment in capacity expansion of new clean technology development and installation. Statewide, public sector investment in renewable energy generation, combined with increased municipal control of electricity production and retail sales, would offer a better and more meaningful long-term solution to the problems that electricity deregulation has raised.

The ultimate solutions to meeting our nation's energy needs must be based on private sector investment, bolstered by well-targeted government support such as tax incentives for emerging energy technologies and R&D. We need policy leadership that does not put renewable energy and energy efficiency at a significant disadvantage in the marketplace. This must be coupled with policies that *open* markets to new generating capacity, rather than through federal subsidies for programs to increase energy supply using already mature technologies. This latter strategy would only generate near-term and incremental paybacks, while doing little to promote energy security or advance social and environmental goals. Instead, we

now have the opportunity to build a sustainable future by engaging and stimulating the tremendous innovative and entrepreneurial capacity of the U.S. private sector. To accomplish this, we must pursue policies that guarantee a stable and predictable economic environment for advancing clean energy technologies. This can be further bolstered by market incentives to reward actions that further the public good. With these thoughts in mind, here are several options that address both the short-term need to increase energy supply and the long-term goal to have a sustainable, economic and environmentally sound U.S. energy policy:

- **Increase federal R&D funding for renewable energy and energy efficiency technologies.** To date, federal investment in renewable energy and energy efficient technologies has been sparse and erratic, with each year producing an appropriations battle that is often lost. The resulting financial and policy uncertainty discourages energy technology development and deployment in the marketplace. If the U.S. expects to be a world leader in this industry, as it is in the biomedical and high-tech sectors, such *sustained* investments in renewable energy and energy efficiency are essential.
- **Provide tax credits in addition to tax cuts for companies developing and using renewable energy and energy efficiency technologies.** The R&D tax credit has proven remarkably effective and popular with private industry, so much so that there is a strong consensus in both Congress and the Administration to make this credit permanent. Clean energy must be a national priority and, given the importance of private sector R&D in

commercializing new technologies, an additional tax incentive for R&D investment in renewable and energy efficiency technologies is exactly the type of well-targeted federal policy that is needed.

- **Institute improved efficiency standards for residential and commercial water heating and space heating and cooling.** Significant advances in heating and cooling system efficiency and for motors and many appliances have been made, but more improvements are technologically possible and economically feasible. A clear federal statement of desired improvements in system efficiency is needed to remove uncertainty and reduce the economic costs of implementing these changes.
- **Establish a federal renewable portfolio standard (RPS) to help build renewable energy markets.** The RPS is a renewable energy content standard, akin to efficiency standards for vehicles and appliances that have proven successful in the past. A gradually increasing RPS is an economic way of ensuring that a growing proportion of electricity sales is provided by renewable energy and is designed to integrate renewables into the marketplace in the most cost-effective fashion. In this manner, the market picks the winning and losing technologies and projects, not administrators. I recommend a 20 to 25% renewable energy component within ten to fifteen years, using market dynamics to stimulate innovation through an active trading program of renewable energy credits.
- **Pursue federal standards to support distributed small-scale energy generation.** Entry into the energy supply

business is severely limited by unfair and economically outdated regulations. The U.S. should pursue a policy of not only net-metered energy use, but *real-time pricing* where homeowners, businesses and industry can all participate fully in supplying their excess power generation into the market. Homes with solar photovoltaic, wind, or fuel-cell systems should be able to sell their excess energy. Business and industry have added opportunities with combined heat and power systems and cogeneration. Opening the energy supply markets to local generation will provide strong, economically sound signals to the utilities, the “Qualifying Facilities” and homeowners that the energy market is fair, accessible and one where clean energy generation will be rewarded. The investment in the grid, largely in the form of upgrades to local sub-stations, will lead to further energy efficiency benefits as an added bonus. Federal leadership and standards are needed to guide this transformation.

- **Form a National Public Benefits Fund based on revenue collected from a national, competitively neutral wires charge.** Such a fund could match state funds to assist in continuing or expanding energy efficiency, low-income services, the deployment of renewables and research and development, as well as public purpose programs—the costs of which have traditionally been incorporated into electricity rates by regulated utilities. With the move toward deregulation, such public benefit funds have been disappearing.
- **Improve federal standards for vehicle fuel economy.** New hybrid vehicle technologies

are beginning to enter the marketplace, offering significant improvements in vehicle fuel economy at modest incremental vehicle costs. Looking beyond the initial wave of gasoline hybrid vehicles, fuel cell vehicles are currently under active development by all of the large automakers and promise even higher efficiencies and still lower emission levels. The improvements in fuel economy that these new vehicle types offer would help to slow growth in petroleum demand, reducing our oil import dependency and trade deficit.

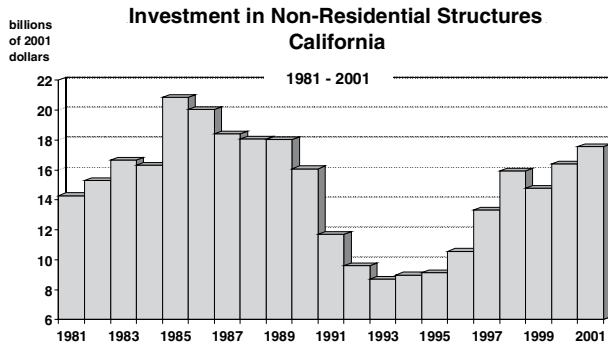
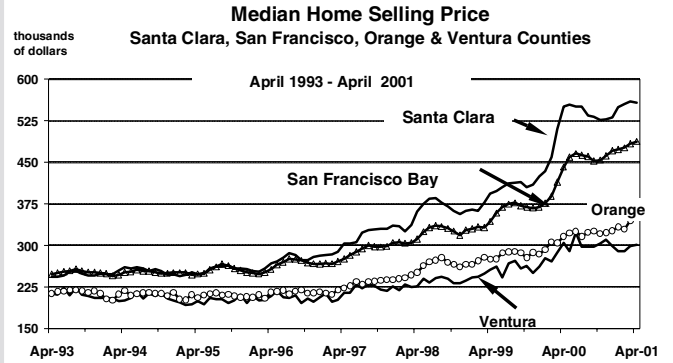
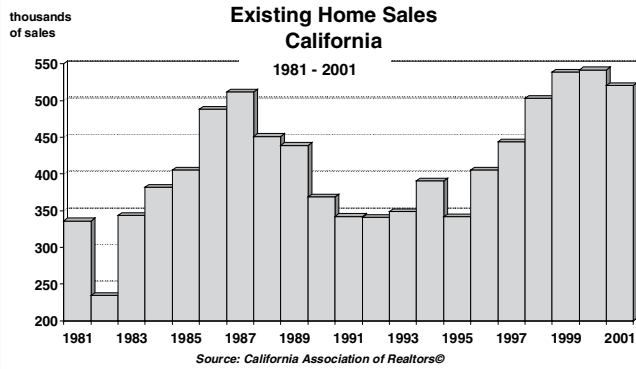
- **Integrate domestic energy and environmental planning with U.S. global leadership.** The need for leadership on the global climate issue has become particularly apparent with the lack of international cooperation at the recent climate meeting in The Hague. It is now widely understood that the costs of inaction on global warming can be catastrophic, while the benefits of actions to reduce the environmental impacts of energy use through new innovation, developing clean energy industries and improving domestic air quality and health can be substantial. This represents the classic “win-win” scenario. ❖

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Facts and Figures

Important Information About California



Electricity Generation Alert Status Days California Independent Operators 1998 - 2001

Alert Status	1998	1999	2000	2001*
	----- number of times -----			
Stage 1 (Reserves less than 7.5%)	7	4	55	66
Stage 2 (Reserves less than 5%)	5	1	36	61
Stage 3 (Reserves less than 1.5%)	0	0	1	38
Rotating Blackouts Ordered	0	0	1	6

* January through May 2001

